ABSTRACT:

A method and apparatus is provided for use by a scheduler of a multi-processor data processing system to select task preemption points based on main memory requirements. There are three alternative preferred embodiments, depending on the allocation of tasks to processors: (1) Fixed Allocation: every task is allocated to a particular processor, i.e. each task exclusively executes on a given processor. This embodiment is preferred when processors are dedicated, i.e., where each processor differs essentially from every other processor; (2) Variable Allocation: every task may execute on every processor. At run-time the scheduler determines which processor executes which task. A task may be preempted while running on one processor, and later continue on another. This embodiment is preferred when all the processors are identical; and (3) Mixed Allocation: every task is allocated to a subset of processors. This is a natural approach when the set of processors can be divided into subsets in which the processors are identical.